

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/97
Date Received: 11/10/97
Project: Metro Grab, PO# M59039
Date Samples Extracted: 11/10/97
Date Extracts Analyzed: 11/11/97

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
FOR CHROMIUM, COPPER, NICKEL, ZINC
USING METHOD 6010**

**Samples Processed Using Method 3005A
Results Reported as mg/L (ppm)**

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M59039	0.49	0.55	0.59	0.11
Method Blank	<0.05	<0.05	<0.05	<0.05

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**QUALITY ASSURANCE RESULTS
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
(METHOD 6010)**

Laboratory Code: 711017-01 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
Chromium	mg/L (ppm)	0.31	0.29	7	0-20
Copper	mg/L (ppm)	0.30	0.28	7	0-20
Nickel	mg/L (ppm)	0.34	0.28	19	0-20
Zinc	mg/L (ppm)	0.09	0.11	20a	0-20

Laboratory Code: 711017-01 (Matrix Spike)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
				<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	0.31	100	105	80-120	5
Copper	mg/L (ppm)	5	0.30	83	93	80-120	11
Nickel	mg/L (ppm)	10	0.34	96	111	80-120	14
Zinc	mg/L (ppm)	5	0.09	105	120	80-120	13

Laboratory Code: LCS

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
			<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	111	117	80-120	5
Copper	mg/L (ppm)	5	111	118	80-120	6
Nickel	mg/L (ppm)	10	114	117	80-120	3
Zinc	mg/L (ppm)	5	112	118	80-120	5

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

PJ# 711028 KJ AI
11-10-97

11-10-97

Contact

PROJECT NAME

PURCHASE ORDER #

SAMPLERS (signature)

PROJECT LOCATION

REMARKS

SAMPLE DISPOSAL INFORMATION

Dispose after 30 days

Return Samples

Call for Instructions

Sample #

Date: 6/20/94

Types of Supply

of
Japs

Lab
Sample #

Analyses Requested

m59039

11/10/57

420

100

01

Ch CJ W. Z.

SIGNATURE

PRINT NAME _____

COMPANY

Date: _____

Time

Relinquished by:

Received by:

Relinquished by:

Received by:

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Jensen, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
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FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 12, 1997

DUPLICATE COPY

INVOICE #97ACU1112-4

Accounts Payable
Alaskan Copper Works
628 South Hanford St.
Seattle, WA 98134

**RE: Project Metro Grab, PO# M59039: Results of testing requested by
Gerry Thompson for material submitted on October 23, 1997.**

1 water sample analyzed for
Chromium, Copper, Nickel, and Zinc
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due

\$ 65.00

FEDERAL TAX ID: (b) (6)

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 12, 1997

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford St.
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on November 10, 1997 from your Metro Grab, PO# M59039 project. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson
Chemist

Enclosures
ACU1112R.DOC